

a first connection coupled to said telephony network and adapted to receive telephony signals therefrom and output telephony signals thereto;

a second connection coupled to said computer data network and adapted to receive data packets therefrom and output data packets thereto;

a digital signal processor coupled to receive signals from said first connection and output signals thereto, wherein said digital signal processor detects events in said signals received from said first connection, wherein said events comprise at least one of caller ID, DTMF, call progress, and other forms of telephony signaling, and further wherein said digital signal processor provides outputs indicative of said detected events;

a synchronous-to-asynchronous converter that receives signals from said first connection and provides an asynchronous output therefrom; and

a control processor that receives said outputs from said digital signal processor indicative of detected events, and wherein said control processor outputs control messages over said data network to a call manager program installed on said data network, wherein said control messages are indicative of said events detected by said digital signal processor, and further wherein said control processor is also coupled to said synchronous-to-asynchronous converter for outputting

asynchronous media streams over said data network via said second connection.

CLAIM 24 (NEW). The invention according claim 23, wherein said digital signal processor generates and receives multiple data streams.

CLAIM 25 (NEW). The invention according to claim 23, wherein said network is an ATM network.

CLAIM 26 (NEW). The invention according to claim 23, wherein said network is an ethernet network.

CLAIM 27 (NEW). The invention according to claim 26, wherein said network is a cells in frames ethernet network.

CLAIM 28 (NEW). The invention according to claim 23, wherein said network is an internet protocol over ATM network.

CLAIM 29 (NEW). The invention according to claim 23, wherein said network is an internet protocol over an ethernet network.

CLAIM 30 (NEW). The invention according to claim 23, wherein said computer data network also carries computer data traffic.

CLAIM 31 (NEW). The invention according to claim 23, wherein said digital signal processor generates and receives multiple data streams.

CLAIM 32 (NEW). The invention according to claim 23, wherein converting between synchronous and asynchronous data comprises a synchronous-to-asynchronous converter using first-in-first-out buffering.

CLAIM 33 (NEW). In a computer data network for transmitting data the improvement comprising:

a plurality of telephone means;
an external interface means for coupling said computer data computer network to at least one outside trunk line of a public switched telephone network (PSTN), wherein said external interface means translates telephony transmissions from the PSTN to data for transmission over said computer data network;
software means for said computer network, said software means comprising first means for performing the functions of a private branch exchange (PBX) for said plurality of telephone means that are connected to the computer data network;
said software means comprising second means for receiving requests for service over said computer data computer network

for any of said plurality of telephones means;

 said software means comprising third means for establishing bi-directional media streams over said computer data computer network between any two of said telephone means upon receiving a request over said computer data computer network for calling one of said plurality of telephone means from another of said plurality of telephone means; and

 said software means comprising fourth means for establishing bi-directional media streams over said computer data computer network between any one of said plurality of telephone means and said interface to said PSTN upon receiving a request over said computer network for an outside line for said one of said plurality of telephone means.

CLAIM 34 (NEW). In a computer data network for transmitting

data, the improvement comprising:

 a plurality of telephone means;

 an external interface means for coupling said computer data computer network to at least one outside trunk line of a public switched telephone network (PSTN), wherein said external interface means translates telephony data from the PSTN to data for transmission over said computer data network;

 software means for said computer network, said software means comprising first means for performing the functions of a

private branch exchange (PBX) for said of plurality of telephone means that are connected to the computer data network; said software means comprising second means for receiving requests for service over said computer data computer network for any of said plurality of telephones means; said software means comprising third means for establishing bi-directional media streams over said computer data computer network between any one of said plurality of telephone means and said interface to said PSTN upon receiving a request over said computer network for an outside line for said one of said plurality of telephone means.

CLAIM 35 (NEW). In a computer data network for transmitting

data, the improvement comprising:

a plurality of telephone means; software means for said computer network, said software means comprising first means for performing the functions of a private branch exchange (PBX) for said of plurality of telephone means that are connected to the computer data network; said software means comprising second means for receiving requests for service over said computer network for any of said plurality of telephones means; said software means comprising third means for establishing bi-directional media streams over said computer network between

any two of said telephone means upon receiving a request over said computer network for calling one of said plurality of telephone means from another of said plurality of telephone means.

CLAIM 36 (NEW). In a computer data network for transmitting

signals between nodes, the improvement comprising:

a software means performing the functions of a private branch exchange running on at least one computer operatively coupled to said computer data network;

a PSTN interface means for coupling the computer data network to a public switched telephone network;

a plurality of telephone means;

telephone interface means for coupling said plurality of telephone means to said computer data network, said telephone interface means converting analog signals into digital data for transmission over said computer data network;

said server comprising computer means, and memory means;

and

software means stored in said memory means for controlling the signaling between said plurality of telephone means and said network, whereby said network acts as a switch for connecting

audio signals from any of said telephone means to a called party.

CLAIM 37 (NEW). The invention according to claim 36, wherein said computer network is one of a: asynchronous transfer mode (ATM), ethernet, or Internet Protocol (IP) network.

CLAIM 38 (NEW). A method of using a computer data network for switching audio signals, comprising:

- (a) coupling a plurality of telephones to the computer data network for digital data transmission over the computer data network;
- (b) using the computer data network as a PBX for switching between the plurality of telephones for making call from one telephone to another of the plurality of telephones, or between at least one of the telephones and the public switched telephone network (PSTN);
- (c) said step (b) comprising assigning priority to the audio signals from the plurality of telephones.

CLAIM 39 (NEW). The method according to claim 38, wherein said step (a) comprises connecting the plurality of telephones to one of a: asynchronous transfer mode (ATM) network, ethernet network, or Internet Protocol (IP) network.